

Amendment and Response  
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Amendments to the Claims:

Please amend the claims to read as follows:

- 1 1. (currently amended) A system comprising:
  - 2 a charge-emission device having an emitter; and
  - 3 a controllable current source electrically connected to the emitter of the charge-
  - 4 emission device by an electrical path, the controllable current source supplying to the
  - 5 emitter of the charge-emission device over the electrical path a controlled amount of
  - 6 electrical current that produces a potential difference at the emitter with respect to an
  - 7 electrode to induce the emitter to emit electrical charge; and
  - 8 a current sink connected to the controllable current source for shunting at least a
  - 9 portion of the electrical current to ground upon a detection of a particular charge emission
  - 10 condition.
- 1 2. (canceled)
- 1 3. (currently amended) The system of claim ~~2~~1, further comprising protection circuitry for
  - 2 detecting the particular charge emission condition and for activating the current sink upon
  - 3 the detection.
- 1 4. (currently amended) The system of claim ~~2~~1, wherein the particular charge emission
  - 2 condition is indicative of an excessive flow of current from the emitter.

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- 1 5. (currently amended) The system of claim 21, wherein the particular charge emission  
2 condition is indicative of an excessive rate of change of the current flowing from the  
3 emitter.
- 1 6. (original) The system of claim 1, wherein the current source is adjustable to enable  
2 changes to an amount of electrical current being supplied by the controllable current  
3 source to the emitter.
- 1 7. (original) The system of claim 1, further comprising a controller directing the  
2 controllable current source to provide a predetermined amount of electrical current.
- 1 8. (original) The system of claim 1, wherein the charge-emission device is a device that  
2 emits ions.
- 1 9. (original) The system of claim 8, wherein the emitted ions have a positive charge.
- 1 10. (original) The system of claim 1, wherein the charge-emission device is a device that  
2 emits electrons.
- 1 11. (original) The system of claim 1, wherein the charge-emission device emits fluid.
- 1 12. (original) The system of claim 1, wherein the charge-emission device is a gated  
2 device.

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1 13. (original) The system of claim 1, wherein the charge-emission device has an array of  
2 emitters including the emitter and a second emitter, and the controllable current source  
3 provides current to each emitter in the emitter array.

1 14. (original) The system of claim 1, wherein the controllable current source is a first  
2 current source, the charge-emission device has an array of emitters including a first  
3 emitter and a second emitter, and further comprising a second controllable current source,  
4 the first current source supplying a first controlled amount of electrical current to the first  
5 emitter and the second current source supplying a second controlled amount of current to  
6 the second emitter.

1 15. (currently amended) A system comprising:  
2 a micro-fabricated charge-emission device having an emitter; and  
3 controllable means for supplying to the emitter of the charge-emission device a  
4 controlled amount of electrical current that produces a potential difference at the emitter  
5 with respect to an electrode to induce the emitter to emit electrical charge; and  
6 means for shunting at least a portion of the supplied electrical current to ground  
7 upon a detection of a particular condition.

1 16. (original) The system of claim 15, further comprising means for signaling the  
2 supplying means to supply the controlled amount of electrical current.

1 17. (original) The system of claim 15, further comprising means for adjusting the  
2 controlled amount of electrical current supplied to the emitter.

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1 18. (canceled)

1 19. (original) The system of claim 15, further comprising means for detecting a  
2 particular charge emission condition.

1 20. (currently amended) A method of controlling an amount of charge emitted by a charge-  
2 emission device, the method comprising:  
3 supplying a controlled amount of current from a controllable current source to an  
4 emitter of a charge-emission device over an electrical path; ~~and~~  
5 emitting charge from the emitter of the charge-emission device in response to the  
6 current received from the controllable current source; and  
7 shunting the current supplied by the controlled current source to ground upon a  
8 detection of a particular charge emission condition.

1 21. (original) The method of claim 20, further comprising adjusting the amount of  
2 electrical current supplied to the emitter by the controlled current source.

1 22. (canceled).

1 23. (currently amended) The method of claim 20, ~~further comprising wherein~~ shunting the  
2 supplied current in response to includes detecting an excessive rate of change in an  
3 amount of charge being emitted by the emitter.

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- 1 24. (currently amended) The method of claim 20, ~~further comprising wherein shunting the~~  
2 supplied electrical current ~~in response to~~ includes detecting an excessive amount of  
3 charge being emitted by the emitter.
- 1 25. (new) A system comprising:  
2 a charge-emission device having an emitter and a gate electrode; and  
3 a controllable current source electrically connected to the emitter of the charge-  
4 emission device by an electrical path over which the controllable current source supplies  
5 a controlled amount of electrical current to the emitter, the supplied amount of electrical  
6 current producing a voltage difference between the emitter and the gate electrode of a  
7 magnitude sufficient to cause the emitter to emit electrical charge without having to use a  
8 voltage supply to apply a voltage bias to the gate electrode in order to achieve the voltage  
9 difference that causes emission of the electrical charge.
- 1 26. (new) The system of claim 25, wherein the charge-emission device is micro-fabricated  
2 and the gate electrode is integrated with the emitter in a micro-fabricated structure.
- 1 27. (new) The system of claim 25, further comprising means for signaling the current source  
2 to supply the controlled amount of electrical current.
- 1 28. (new) The system of claim 25, further comprising means for adjusting the controlled  
2 amount of electrical current supplied to the emitter.

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- 1 29. (new) The system of claim 25, further comprising a current sink connected to the  
2 controllable current source for shunting at least a portion of the electrical current to  
3 ground upon a detection of a particular charge emission condition.
- 1 30. (new) The system of claim 29, further comprising protection circuitry for detecting the  
2 particular charge emission condition and for activating the current sink upon the  
3 detection.
- 1 31. (new) The system of claim 29, wherein the particular charge emission condition is  
2 indicative of an excessive flow of current from the emitter.
- 1 32. (new) The system of claim 25, wherein the charge-emission device has an array of  
2 emitters including the emitter and a second emitter, and the controllable current source  
3 provides current to each emitter in the emitter array.
- 1 33. (new) The system of claim 25, wherein the controllable current source is a first current  
2 source, the charge-emission device has an array of emitters including a first emitter and a  
3 second emitter, and further comprising a second controllable current source, the first  
4 current source supplying a first controlled amount of electrical current to the first emitter  
5 and the second current source supplying a second controlled amount of current to the  
6 second emitter.

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1 34. (new) A method of controlling an amount of charge emitted by a charge-emission device  
2 having an emitter and a gate electrode, the method comprising:  
3 supplying a controlled amount of current from a controllable current source to the  
4 emitter of the charge-emission device over an electrical path; and  
5 producing, by the controlled amount of current, a voltage difference between the  
6 emitter and the gate electrode of a magnitude sufficient to cause the emitter to emit  
7 electrical charge without having to use a voltage supply to apply a voltage bias to the gate  
8 electrode in order to achieve the voltage difference that causes emission of the electrical  
9 charge.

1 35. (new) The method of claim 34, further comprising adjusting the amount of electrical  
2 current supplied to the emitter by the controlled current source.

1 36. (new). The method of claim 34, further comprising shunting the current supplied by the  
2 controlled current source to ground upon a detection of a particular charge emission  
3 condition.

1 37. (new) The method of claim 36, wherein shunting the supplied current includes detecting  
2 an excessive rate of change in an amount of charge being emitted by the emitter.

1 38. (new) The method of claim 36, wherein shunting the supplied electrical current includes  
2 detecting an excessive amount of charge being emitted by the emitter.